SISTEM



SOLAR SOLID WATER FUEL BOILER

4 Seasons

www.sistemtubular.com





About Us

Sistem Enerji Uretim San Tic Ltd, started its activities in the production sector, in 1994 under the leadership of Nazım ÇİMEN, the founder partner who wanted to combine his experiences in the field of Mechanical Engineering with his ideals, and carried on its work under the name of "Sistem Tubular" brand.

Sistem Enerji Uretim San Tic Ltd. is the first company in Turkey which has started the vacuum tube solar water heater instead of flat plate solar energy. Innovations not limited to this, today's pressurized solar water heater is created by the ongoing R & D works, and this product has been internationally patented.

Our company which is frequently mentioned with its investments, is the biggest shareholder and founding partner of Solar-san Vacuum Glass Tube Production San Tic A.S company which produces vacuum glass tube. Sistem Tubular has 30.000 units of solar water heater and 2000 units of solid fuel boiler production capacity as well as. Investments are not limited to Turkey. By establishing a solar water heater factory in Mexico with annual capacity of 30,000 units, we continue to create jobs both at home and abroad.

Our company has created a team of engineers in the factory that uses advanced technology to carry out innovative designs. In this respect, we have the opportunity to develop, produce and present our products to consumers in a multi-purpose and functional manner.

"Sistem Tubular" continues to grow with its widespread domestic and international sales networks.



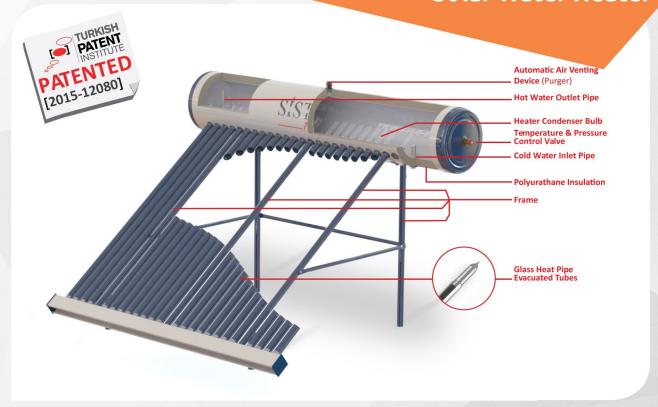








HEAT PIPE INTEGRATED PRESSURIZED Solar Water Heater



This product combines the ease of use of closed-loop pressure systems with water capacity of open-loop unpressurized systems. The most important feature that separates this product from the others is that it works without having any equipment in the reservoir such as double-wall, serpentine and, heat-exchanger. In order to achieve this, a special designed sealing ring has been developed to resist against pressure.

The cold tab water, entering reservoir, is heated by natural convection thanks to vacuum tube and glass heat pipe, which are specially designed, and becomes ready to use as hot water.

A pressure reducer is placed in the inlet of the system, designed to work pressure of max 4 barsh to ensure comfortable hot water usage, to protect it from instantaneous pressure fluctuations in the city water supply. In addition, a temperature and pressure control valve is placed to prevent overheating of the system in summer.

The inner surface of the hot water reservoir is coated with titanium enamel so that the system is hygienic and resistant to corrosion.

Our new frame, having a modern and ergonomic design, is safe against environmental effects such as snow load, wind, etc.

The frame provides ease of assembly. So it can be installed easily on any kind of ground or platform.

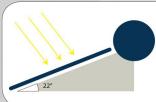
In this system, unlike non pressurized one, it is not necessary to set it up to raise the level difference. It can also be installed in the garden instead of the roof at home to prevent visual pollution. It is also ideal for the top floors of the apartments.





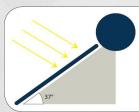






H Model

It should be preferred in geographies where the latitude is low and the sun rays are steep. Provides higher performance due to 22° angle.



V Model

It should be preferred in geographies where the latitude is high and the sun rays are inclined. Provides higher performance due to 37° angle.

Model	Frame Angle	Absorber Tube Type	Tube Dimensions	HxWxL (mm)	Capacity (It/day)	Inner Tank Material and Wall Thickness	Inner Tank Coating	Boiler Net Weight	Max Operating Pressure	Test Pressure	Gross / Aperture Area (m²)	Insulation	Insulation Layer Thickness
Ephesus 16-H	22°	Heat Pipe	Ø47x1930 16 pcs	1225×1695×2085	140 lt	Enamelled Sheet	Titanium Enemal Coating	42 kg	4 bar	6 bar	2,37 / 1,16	40 kg/m³ Polyurethane (CFC free)	50mm
Ephesus 24-H	22°	Heat Pipe	Ø47x1930 24 pcs	1225x1695x2085	200 lt	Enamelled Sheet	Titanium Enemal Coating	54 kg	4 bar	6 bar	3,4 / 1,73	40 kg/m³ Polyurethane (CFC free)	50mm
Ephesus 16	37°	Heat Pipe	Ø47x1930 16 pcs	1625x1695x1825	140 lt	Enamelled Sheet	Titanium Enemal Coating	42 kg	4 bar	6 bar	2,37 / 1,16	40 kg/m³ Polyurethane (CFC free)	50mm
Ephesus 24	37°	Heat Pipe	Ø47x1930 24 pcs	1625x2230x1825	200 lt	Enamelled Sheet	Titanium Enemal Coating	54 kg	4 bar	6 bar	3,4 / 1,73	40 kg/m³ Polyurethane	50mm

MANIFOLD Solar Heaters

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It is preferred in places where there is a lot of hot water consumption such as mass housing, institution and hotel by adding them together in the form of a series according to usage need.



Model	Frame Angle	Absorber Tube Type	Tube Dimensions (mm) and pcs	HxWxL (mm)	Inner Tank Material and Wall Thickness	Dry Assembly Weight	Gross / Aperture Area m²	Outer Material	Insulation Layer Spec.	Insulation Layer Thickness
SY4844	44°	Evacuated Tube	Ø47x1800 48 pcs	1877x3730x192	AISI 304L Stainless Steel 0.50 mm	105 kg	5,1 / 3,68	Ral9002 Painted Galvanized Steel	40 kg/m³ Polyurethane (CFC Free)	35mm

GLASS HEAT PIPE EVACUATED TUBE



Property	Value & Unit
Length	1930 mm
Outer tube diameter	47 mm
Inner tube diameter	37 mm
Thermal expansion	3.3x10-6 °C ⁻¹
Material	Borosilicate glass 3.3
Surface coating material	AL-CU-SS selective
Light absorption rate	96%
Emission rate	4-5 %
Vacuum	P<0.004 Pa
Empty tube temperature	>200°C
Heat loss coefficient	<0.8 W/m ² .K
Reflection ratio	7 % (100 °C)

What is glass heat pipe evacuated tube?

How it works?

Glass heat pipe evacuated tube also consists of a two layers of glass with a vacuum in between the layers like conventional solar vacuum tubes. On the other hand, its difference from conventional vacuum tubes is that the open end of the tube is closed using a special geometry like a dome shape to increase resistant to axial loads in pressurized reservoir systems. This enclosed area, which is inside the inner tube, is vacuumed and a heat transfer fluid is injected into it.

The special selective coating on the outer surface of the inner tube changes solar radiation into heat then absorbed solar radiation is transferred to a heat transfer fluid within the tube. This liquid quickly heats up, changes its form to gas and rises to the top. It reaches the dome shaped condenser in the usage water reservoir. Since the outer surface of the condenser is in contact with the relatively colder usage water in the reservoir, the heat transfer fluid in the form of gas condenses on the inner surface of the condenser. The condensing chemical returns back in droplets to the sun-exposed base of the tube. As long as the system is heated by the sun, the circulation continues.

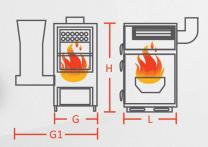
Advantages

Contrary to conventional vacuum tubes, there is no water circulation inside the tube, so calcification problem due to water is prevented.

Due to no water circulation, there is no risk of freezing or breaking the tube in winter.

SOLID FUEL Boilers



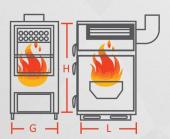


Three Pass
Auto Heat-Controller
Flame Rotative
High Efficiency
Digital Board
Modern Design
Auto-Feeding

TVDE	CAPACITY		G	G1	L	н	Spiral Disassembly	Diameter of	Boiler	Expansion	Operating Pressure
TYPE	Kcal/h	Kw	(mm)	(mm)	(mm)	(mm)	Distance (mm)	Chimney (mm)	Out-In	Out/In	(Bar)
ELT 3G/S-30	30.000	35	450	1130	770	1360	700	130	1"	3/4"	3
ELT 3G/S-40	40.000	47	625	1325	770	1410	750	130	1"	3/4"	3
ELT 3G/S-50	50.000	58	625	1325	880	1450	750	130	1 1/4"	3/4"	3
ELT 3G/S-70	70.000	81	720	1365	1000	1550	850	170	1 1/2"	1"	3

^{*}Our company has right to make changes without prior notice due to technological advances.

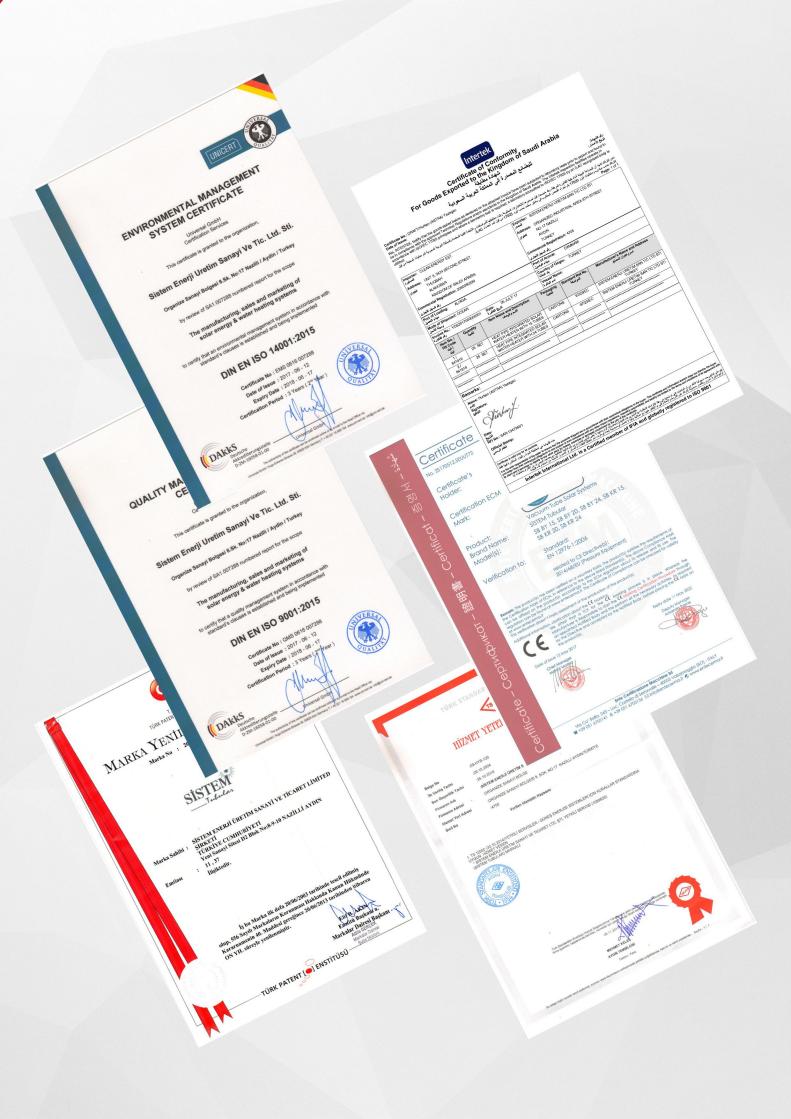




Three Pass
Auto Heat-Controller
Flame Rotative
High Efficiency
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Modern Design

TYPE	CAPA	CITY	G (mm)	L H	н	Diameter of Chimney	Boiler	Expansion	Operating Pressure (Bar)	
ITPE	Kcal/h	Kw			(mm)	(mm)	Out-In	Out/In		
ELT 3G/35	35.000	41	670	720	1350	130	1"	3/4"	3	
ELT 3G/45	45.000	53	670	810	1350	130	1 1/4"	3/4"	3	

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